



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

16

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,555	10/04/2001	Victor F. Petrenko	392500	1455

7590

08/29/2003

Thomas Swenson
Lathrop & Gage L.C.
Suite 302
4845 Pearl East Circle
Boulder, CO 80301

EXAMINER

VAN, QUANG T

ART UNIT	PAPER NUMBER
----------	--------------

3742

DATE MAILED: 08/29/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/970,555

Applicant(s)

PETRENKO, VICTOR F.

Examiner

Quang T Van

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23,25-27,43 and 44 is/are pending in the application.
- 4a) Of the above claim(s) 25-27 and 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,11-15,18-20,23 and 43 is/are rejected.
- 7) ☒ Claim(s) 8-10,16,17,21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Election/Restrictions

1. Applicant's election of Group I, Species I (claims 1-27) in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Further, claims 25-27 and 44 read on Species II; therefore, claims 25-27 and 44 are withdrawn from consideration.

Drawings

2. The drawings are objected to because the upper ice layer (464) of figure 5, has a wrong hatching (see MPEP § 608.02). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 18-20 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bridges et al (US 5,586,213). Bridges discloses, figure 4, an ionic contact media comprising a first electrode (12) disposed on a surface (18) a second electrode (14) proximate to the first electrode (12); an interelectrode space (38)

Art Unit: 3742

See figure 4
separating the first (12) and second electrodes (14); and a power source (24) connected to the first (12) and second electrodes (14), the power source (24) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (38).

5. Claims 1, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Brouns et al (US 4,376,598). Brouns discloses, figures 3-4, a verifying soil at or below a soil surface location comprising a first electrode (10) disposed on a surface (15) a second electrode (10) proximate to the first electrode (10); an interelectrode space (20) separating the first (10) and second electrodes (10); and a power source (col. 7, lines 56-61) connected to the first (10) and second electrodes (10), the power source capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (20).

6. Claims 1-2, 4 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (US 4,651,825). Wilson, discloses, figure 4, an enhance well production comprising a first electrode (31) disposed on a surface (7) a second electrode (32) proximate to the first electrode (31); an interelectrode space (1) separating the first (31) and second electrodes (32); and a power source (6) connected to the first (31) and second electrodes (32), the power source (6) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (1).

7. Claims 1-2, 11-15, 18 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Heath et al (US 5,330,291). Heath discloses, figure 13, a heating of solid

earthen material comprising a first electrode (202) disposed on a surface (200) a second electrode (204) proximate to the first electrode (202); interelectrode space (d) separating the first (202) and second electrodes (204); and a power source (206) connected to the first (202) and second electrodes (204), the power source (206) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (d).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 4,651,825). Wilson discloses substantially all features of the claimed invention including an AC voltage between 50-100Volts with a frequency of 60 Hz. Wilson does not disclose an AC voltage having a frequency in a range greater than 1KHz. However, Wilson did suggest the alternative current could be employed at any frequency (col. 6, lines 34-36). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use AC voltage having a frequency in a range greater than 1KHz. Since more frequency would provide more heat to the object.

10. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges et al (US 5,586,213) in view of Bridges (US 5,012,868). Bridges'213 discloses

Art Unit: 3742

substantially all features of the claimed invention except a current density range from 1 to 100mA/cm² in the interelectrode space. Bridges'868 discloses a current density range from 1 to 100mA/cm² in the interelectrode space (col. 18, lines 1-10). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in bridges'213 a current density range from 1 to 100mA/cm² in the interelectrode space as taught by Bridges'868 in order to cover more heating range in the interelectrode space.

11. Claims 8-10, 16-17 and 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show or suggest the interelectrode space has a thickness not exceeding 3 mm as recited in claims 8-10; the second electrode is a mesh comprising metal mesh fibers as recited in claims 16-17; and the first electrode comprising aluminum and the porous insulator layer comprises aluminum oxide as recited in claims 21-22.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 703-306-9162. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sang Paik can be reached on 703-308-1147. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 3742

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.



QV
August 26, 2003



Quang T Van
Primary Examiner
Art Unit 3742